

TRANSLATION

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>2003P01873WO</b>	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. <b>PCT/EP2004/053371</b>	International filing date ( <i>day/month/year</i> ) <b>09.12.2004</b>	Priority date ( <i>day/month/year</i> ) <b>09.12.2003</b>
International Patent Classification (IPC) or national classification and IPC <b>H02K1/27</b>		
Applicant <b>BSH BOSCH UND SIEMENS HAUSGERÄTE GMBH</b>		

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>6</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of <u>2</u> sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s))</p> <p>_____ , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>																										
<p>4. This report contains indications relating to the following items:</p> <table><tr><td><input checked="" type="checkbox"/></td><td>Box No. I</td><td>Basis of the report</td></tr><tr><td><input type="checkbox"/></td><td>Box No. II</td><td>Priority</td></tr><tr><td><input type="checkbox"/></td><td>Box No. III</td><td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td></tr><tr><td><input type="checkbox"/></td><td>Box No. IV</td><td>Lack of unity of invention</td></tr><tr><td><input checked="" type="checkbox"/></td><td>Box No. V</td><td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td></tr><tr><td><input type="checkbox"/></td><td>Box No. VI</td><td>Certain documents cited</td></tr><tr><td><input type="checkbox"/></td><td>Box No. VII</td><td>Certain defects in the international application</td></tr><tr><td><input checked="" type="checkbox"/></td><td>Box No. VIII</td><td>Certain observations on the international application</td></tr></table>			<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input checked="" type="checkbox"/>	Box No. VIII	Certain observations on the international application
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Date of submission of the demand	Date of completion of this report																									
Name and mailing address of the IPEA/EP	Authorized officer																									
Facsimile No.	Telephone No.																									

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/053371

Box No. I

Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-5 \_\_\_\_\_ as originally filed/furnished
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the claims:
- nos. \_\_\_\_\_ as originally filed/furnished
- nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19
- nos.\* 1-10 \_\_\_\_\_ received by this Authority on 20.01.2006 with letter
- nos.\* \_\_\_\_\_ received by this Authority on of 18.01.2006
- ☒ the drawings:
- sheets 1/1 \_\_\_\_\_ as originally filed/furnished
- sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1.	Statement		
	Novelty (N)	Claims <u>1-10</u>	YES
		Claims _____	NO
	Inventive step (IS)	Claims <u>1-10</u>	YES
		Claims _____	NO
	Industrial applicability (IA)	Claims <u>1-10</u>	YES
		Claims _____	NO
2.	Citations and explanations (Rule 70.7)		
	Reference is made to the following documents:		
	D1: PATENT ABSTRACTS OF JAPAN, vol. 2003, no. 07, 3 July 2003 (2003-07-03) & JP 2003 088071 A (TOSHIBA CORP), 20 March 2003 (2003-03-20)		
	D2: PATENT ABSTRACTS OF JAPAN, vol. 1998, no. 03, 27. February 1998 (1998-02-27) & JP 09 294344 A (MEIDENSHA CORP), 11 November 1997 (1997-11-11)		
	D3: PATENT ABSTRACTS OF JAPAN, vol. 1999, no. 09, 30 July 1999 (1999-07-30) & JP 11 098792 A (MATSUSHITA ELECTRIC IND CO LTD), 9 April 1999 (1999-04-09)		
	D4: US 2002/070619 A1 (NISHIYAMA NORIYOSHI ET AL) 13 June 2002 (2002-06-13)		
	D5: US 2002/145352 A1 (MOMORU KIMURA ET AL) 10 October 2002 (2002-10-10).		
1.	Document D5 is considered to be the prior art closest to the subject matter of claim 1 and (see figure 5) discloses an electric machine with a stator(10), said stator being provided with <div style="text-align: right;">/...</div>		

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

current-carrying coils and a magnetisable rotor (20) which is equipped in the circumferential direction with multiple permanent magnets (52), each of which is embedded into a magnet seat (51) between the circumferential surface and shaft (23) in such a way that the permanent magnets (52) are fully encompassed in the radial direction by the circumferential surface of the rotor, the permanent magnets (52) being rectangular with their narrow sides being disposed in the circumferential direction, and the stator comprising a plurality of stator teeth with tooth shoes, the end-faces thereof that face the rotor (20) being level and tangential relative to the circumferential surface of the rotor.

2. Thus, the subject matter of claim 1 differs from the electrical machine according to D5 in that:
- (a) on the magnet seat, laterally and in a circumferential direction of the rotor, material recesses in the laminated core within the rotor extend axially in such a way that:
  - (b) at least the axial edge of the permanent magnet that is adjacent to the circumferential surface of the rotor, projects into the material recesses (8);  
and

/...

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

- (c) in consequence, the permanent magnet is wider in the circumferential direction than the neck of its associated rotor pole shoe and a portion of the widthways extent of its outer surface is on the rotor pole shoe; and
- (d) in that said portion of a tooth shoe width corresponds to a stator tooth in the circumferential direction.

The technical effect of these features is that the magnetic flux in the rotor pole shoe is increased and the transmission of the magnetic flux from the rotor the stator is maximal.

The features of (a), (b) and (c) are known from D2 (see figure 2d), and it is to be presumed that the incorporation of only said features in the machine according to D5 would not involve an inventive step; however, feature (d) is not known from any of the available prior art.

The subject matter of claim 1 and of the following dependent claims, claims 2-10, is therefore novel (PCT Article 33(2)) and, in consequence, involves an inventive step (PCT Article 33(3)).

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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

In the characterising part of claim 1, reference is made to a laminated core ("of the laminated core") in the absence of any previous definition thereof. This gives rise to a lack of clarity in claim 1 (PCT Article 6).